

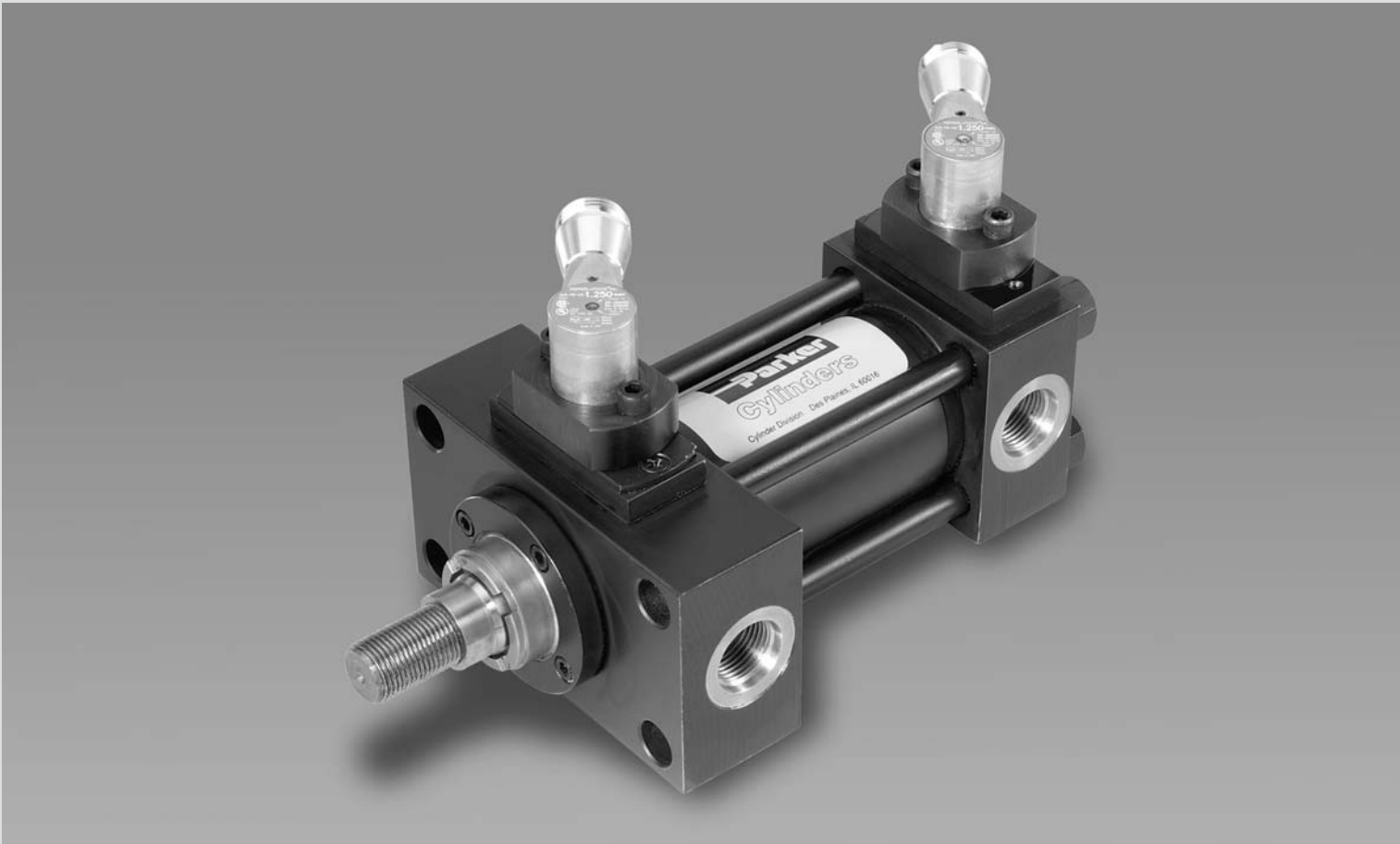


Cylinder End-of-Stroke Proximity Sensors For Parker Series 2A, 2H, 3L, 3H & HMI Cylinders

INNOVATIONS

*Step Up to the
Next Level*

*Bulletin 0840-B11
Effective: November, 2002*



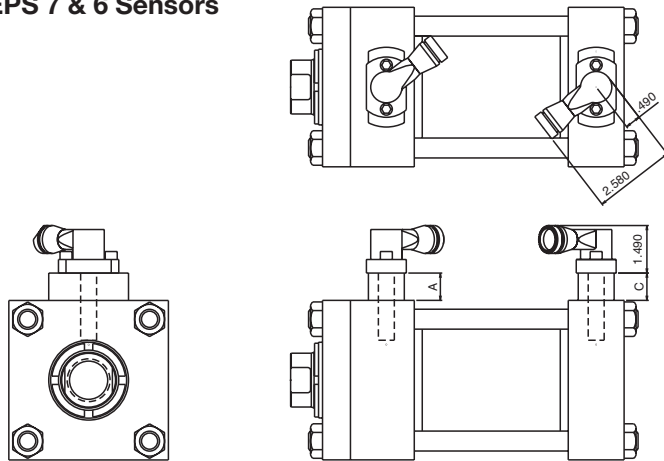
“EPS” Style Inductive Sensors
For General Industrial AC and DC Applications

“CLS” Style Magnetic Sensors
For Extreme Temperature Applications

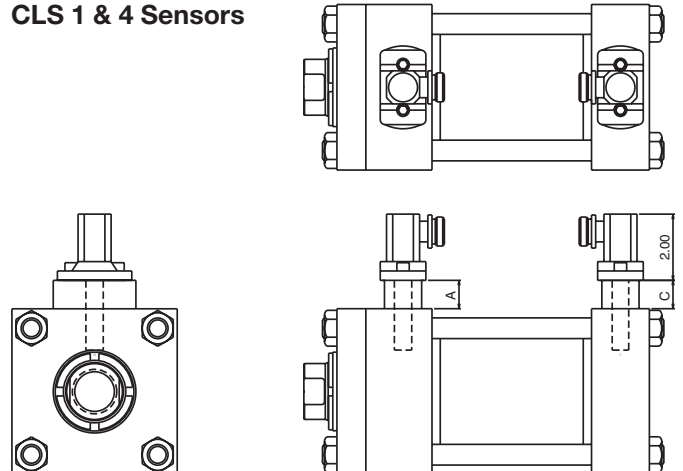
All Sensors Are:
Non-Contacting
Water Resistant
Weld-Field Immune
Shock and Vibration Resistant
Flange-Mounted to Cylinder End Caps

Dimensional Information

EPS 7 & 6 Sensors

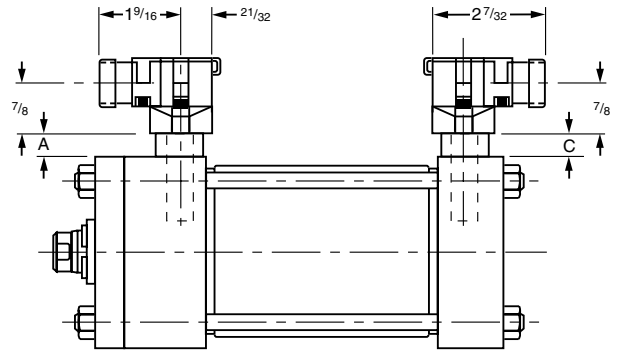
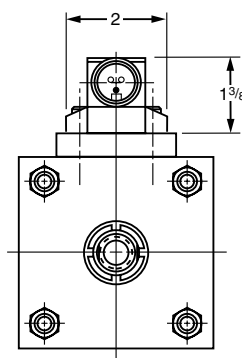


CLS 1 & 4 Sensors



EPS 5 Automotive Applications

(Meets some Automotive Manufacturer's Specifications)



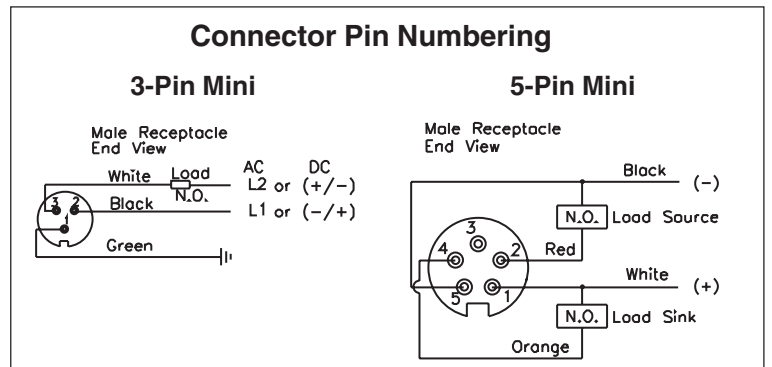
Series and Parallel Wiring

When Parker EPS-5, 6 or 7 proximity switches are used as inputs to programmable controllers the preferred practice is to connect each switch to a separate input channel of the PC. Series or parallel operations may then be accomplished by the internal PC programming.

Parker EPS-5, 6 or 7 switches may be hard wired for series operation, but the voltage drop through the switches (see specifications) must not reduce the available voltage below what is needed to actuate the load.

Parker EPS-5, 6 or 7 switches may also be hard wired for parallel operation. However, the leakage current of each switch will pass through the load. The total of all leakage currents must not exceed the current required to actuate the load. In most cases, the use of two or more EPS-5, 6 or 7 switches in parallel will require the use of a bypass (shunt) resistor.

| Series | A max. | C max. |
|--|--------|--------|
| 2H/3H 1.5"-8" bores | .86" | 1.75" |
| 3L | 1.55" | 1.05" |
| 2A | 1.55" | 1.30" |
| HMI | 1.19" | 1.05" |
| For exact dimensions, see Bulletin 0840-G-E1 | | |



Specifications

| Specifications | | | | | |
|---------------------------|---|---|---|--|---|
| Style: | EPS-7 | EPS-5 | EPS-6 | CLS-1 | CLS-4 |
| Code Designator: | H | R | D | F | B |
| Description: | Economical, General Purpose, 2 wire device, primarily for AC applications, not suitable for 24 VDC applications. Use EPS-5 only for automotive industry customers who specify them. | | Economical, General Purpose, 3 wire, DC sensor, dual output: sinking and sourcing | Functional replacement for AB (Mechanical) Limit Switches in many applications, or where customer needs NC contacts, zero leakage, zero voltage drop, higher or lower load current than EPS-style. | Functional replacement for AB (Mechanical) Limit Switches in many High Temperature applications, or where customer needs NC contacts, zero leakage, zero voltage drop, higher or lower load current than EPS-style. |
| Supply Voltage: | 20 to 250 VAC/DC | 20 to 230 VAC/DC | 10 to 30 VDC | 24 to 240 VAC/DC | 24 to 240 VAC/DC |
| Load Current, min: | 8 mA | 5 mA | NA | NA | NA |
| Load Current, max: | 300 mA | 500 mA | 200 mA | 4 AMPS @ 120 VAC 3 AMPS @ 24 VDC | 4 AMPS @ 120 VAC 3 AMPS @ 24 VDC |
| Leakage Current: | 1.7 mA, max. | 1.7 mA, max. | 10 micro amps max. | - | - |
| Voltage Drop: | 7 V, max. | 10 V, max | 2 VDC max. | NA | NA |
| Operating Temperature: | -14° to +158° F | -4° to +158° F | -14° to +158° F | -40°F to +221° F | -40° F to +400° F |
| Sensor Type: | Inductive proximity | Inductive proximity | Inductive proximity | Non-contacting magnetically actuated | Non-contacting magnetically actuated |
| Part Number: | 148897**** | 146617**** | 148896**** | 148275**** | 149109**** |
| Part Number Suffix **** : | **** 4-digit suffix indicates probe length: 0125=1.25", 0206=2.06", 0288=2.875", 0456=4.562" | | | | |
| Connection: | 3 pin mini | 3 pin mini | 5 pin mini | 3 pin mini | 144" PTFE Coated Flying Leads with 1/2" conduit hub |
| Enclosure Rating: | IEC IP67 | NEMA 4, 6, 12, 13 | IEC IP67 | NEMA 1, 2, 3, 4, 4x, 5, 6, 6P, 11, 12, 12K, 13 | NEMA 1, 2, 3, 4, 4x, 5 |
| LED indication: | Yes | Yes | Yes | No | No |
| Short Circuit Protection: | Yes | Yes | Yes | No | No |
| Weld Field Immunity: | Yes | Yes | Yes | Yes | Yes |
| Output: | 2 wire, Normally Open with leakage current | 2 wire, Normally Open with leakage current | Dual output: DC Sinking and DC Sourcing, user selectable via wiring | SPDT (Single Pole Double Throw), Normally Open/Normally Closed, Form C | SPDT (Single Pole Double Throw), Normally Open/Normally Closed, Form C |
| Approvals/ Marks: | CE, UL, CSA | UL | CE, UL, CSA | UL or CSA | UL or CSA |
| Make/ Break Location | 0.125" from end of stroke, typical. Tolerance is 0/- .125" | | | | |
| Wiring Instructions: | Pin 1: AC Ground (Green) Pin 2: Output (Black) Pin 3: AC Line (White) | Pin 1: AC Ground (Green) Pin 2: Output (Black) Pin 3: AC Line (White) | Pin 1) +10 to 30 VDC (White) Pin 2) Sourcing Output (Red) Pin 3) Grounded (not connected or required) Pin 4) Sinking Output (Orange) Pin 5) DC Common (Black) | Pin 1: Common (Green) Pin 2: Normally Closed (Black) Pin 3: Normally Open (White) | Common: (Black) Normally Open: (Blue) Normally Closed: (Red) |
| Cable: 6' | 085355-0006 | 085355-0006 | 085917-0006 | 085355-0006 | - |
| Cable: 12' | 085355-0012 | 085355-0012 | 085917-0012 | 085355-0012 | - |
| Cable: 6', Right Angle | 087547-0006 | 087547-0006 | - | 087547-0006 | - |

How To Order

Parker EPS proximity switches may be ordered on Series 2A, 2AN, 3L, 3H and HMI cylinders as follows:

- 1) Complete the basic cylinder model number.
- 2) Place an "S" in the model number to denote switches and/or special features.

3) Mounting styles E, D, DB, JJ, JB, or HB should be used with caution because of possible mounting interferences. Consult bulletin 0840-G-E1 for additional information.

4) Special modifications to cylinders other than switches must have a written description.

Basic Cylinder Model Numbers

| | Bore Size | Cushion Head End | Double Rod | Mtg. Style | Mtg. Mod. | Comb. Mtg. Style | Series | Piston | Ports | Common Modifications | Special Modifications | Piston Rod No. | Rod End Thread | Alternate Std. Rod End Thd. Length | Thread Type | Cushion Cap End | Stroke |
|---------|-----------|--|---------------------------------------|--------------------|--|--|---|---|---|---|--|----------------------|--|---|------------------------------------|---|---|
| EXAMPLE | 6 | C | - | BB | - | - | 2H | L | T | V | S | 1 | Style No. | 2 | A | C | x24,000 |
| | Specify | Specify only if Cushion Head End is req'd. | Use only if Double Rod Cyl. is req'd. | Specify mtg. style | Specify P - for Thrust Key Mtg. M - for Manifold Ports | Specify any practical mtg. style available | Specify 2A, Series 2AN, 3L, or 2H or 7" & 8" 3H | For ring type piston no letter req'd. Use - L for Lipseal Piston Use K for Hi-Load Piston | Specify Port Type req'd. U = NPTF T = S.A.E. R = BSP B = BSPT G = Metric P = S.A.E. Flange Port | If req'd. specify V=Fluorocarbon Seals F=Nut Retained Piston X=E.P.R. Seals W=Water service J=High Water Content Fluid | Specify only if special modifications including proximity switches are req'd. Do not use symbol "S" for rod end modifications | Specify rod code no. | Specify Style 4 Small Male Style 8 Intermediate Male Style 9 Short Female Style 3 Special. Specify KK, A, LA or W dim req'd. | Specify only if 2 times Standard Catalog "A" dim. is req'd. | Specify A=UNF W=BSF M=Metric | Specify only if Cushion Cap End is req'd. | Specify in inches, show symbol "X" just ahead of stk. length. |

How to Specify EPS Switches

5) Specify letter prefix "H" for EPS-7, "D" for EPS-6, and "F" for CLS-1, or "B" for CLS-4, then fill in the four blanks specifying port location, switch orientation and actuation point for both head and cap. If only one switch is used, place "XXXX" in the unused blanks.

Example = H13CGG-XXXX denotes a switch on the head end only, EPS-7

Example = BXXXX-42BGG denotes a switch on the cap end only, CLS-4

Head End

| R | 1 | 3 | A | GG |
|---|--------------------------------|----------------------------------|--|--|
| Specify: "H" = EPS-7 "D" = EPS-6 "F" = CLS-1 "B" = CLS-4 "R" = EPS-5 "N" = Prepared for switches only | Port Location See Figure 1. | Switch Location See Figure 1. | Switch Orientation See Figure 2 for EPS-7 and EPS-6 only. | Actuation Point GG = End of Stroke FF = Stroke to Go; See Bulletins 0840-G-E1 for stroke remaining. |

Cap End

| 4 | 2 | B | GG |
|--------------------------------|----------------------------------|---|--|
| Port Location See Figure 1. | Switch Location See Figure 1. | Switch Orientation* See Figure 2 for EPS-7 and EPS-6 only. | Actuation Point GG = End of Stroke FF = Stroke to Go; See Bulletins 0840-G-E1 for stroke remaining. |

Note: All specified switch and port locations are as seen from rod end of cylinder.
*EPS-5 switches will be oriented so that the connectors face each other.

Figure 1

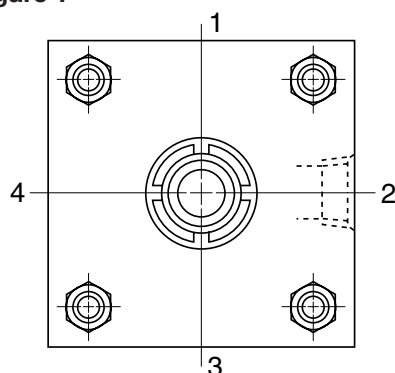


Figure 2

